133160

Superfund Program Proposed Plan

Stanley Kessler Site

King of Prussia, Pennsylvania

June 20, 1994

EPA ANNOUNCES PROPOSED PLAN

The U.S. Environmental Protection Agency ("EPA") is issuing this Proposed Remedial Action Plan ("Proposed Plan") to present EPA's Preferred Remedial Alternative for cleaning up contamination at the Stanley Kessler Site ("Site") located in Upper Merion Township, Montgomery County, Pennsylvania. This Proposed Plan summarizes information obtained from the recently completed ***Remedial Investigation and Feasibility Study ("RI/FS")***, and the technologies being considered for the cleanup of the Site. The EPA is presenting this Proposed Plan to solicit public comments on the preferred alternative and the other alternatives for remediation of the contaminants present on the Site. EPA, in consultation with the Pennsylvania Department of Environmental Resources ("PADER"), will select a final remedy for the Site only after the public comment period has ended and the comments received during the comment period have been reviewed and considered. The final remedy will be outlined in the ***Record of Decision ("ROD")*** for the Site. Based on new information and/or comments received, the remedy selected in the ***ROD*** may be different from the preferred alternative.

Dates to remember:

June 20-July 19, 1994
Public comment period on alternatives in Proposed Plan.

June 30, 1994
Public meeting at Upper Merion Township Bldg., Freedom Hall, 175 West Valley Forge Rd., King of Prussia.

INSIDE:

This is the first and only remedy anticipated for the Site. This remedy will address all of the media impacted by the contamination at the Site.

The Proposed Plan is being issued as part of EPA's public participation requirements under Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"). The public's comments will be incorporated in the Responsiveness Summary contained in the ***ROD*** for the Site. This document summarizes information that can be found in greater detail in the ***RI/FS*** report and other documents contained in the ***Administrative Record*** file for the Site. EPA encourages

the public to review these documents in order to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted there. The locations of the Administrative Record file for the Site and the address to send comments on this Plan are given at the back of the Proposed Plan. The Proposed Plan also contains a glossary of terms that may be unfamiliar to the general public. The terms in ***bold*** print in the text are available in the glossary in the back of the Proposed Plan.

II. SITE BACKGROUND

The site is located in the southern portion of Montgomery County, on the USGS Norristown, PA 7.5-minute series quadrangle at approximately 75° 21' 18" W longitude and 40° 05' 00" N latitude. (See Figure 1).

The 3.21 acre site is located within an industrialized area of King of Prussia, Montgomery County. The property contains an approximate 14,760 square foot 1 story masonry building where wire is degreased and respooled.

Materials are stored on a level paved area south of the building. This paved area is enclosed by an eight-foot high chain-link fence. The Stanley Kessler and Company, Inc. ("Kessler") conducts operations at the Site which consist of degreasing and repackaging welding wire. There are no manufacturing operations at the facility. Since approximately 1963, solvents have been used for degreasing; prior to 1963, acids and bases were used for cleaning metals. During the period when acids were used, splashed acid, or drag-out, from the acid-dip degreasers was washed down a series of floor drains inside the building to an onsite acid waste neutralization system. This neutralization system consisted of two tanks which have historically been referred to as the septic tank (Tank 1) and cesspool (Tank 2). Tank 1 consisted of a concrete vessel, containing crushed limestone to neutralize the acid, with a baffled overflow to Tank 2. Tank 2 was a cinder block vessel which had no structural bottom and was open to native soils. Tank 2 was the most northerly of the two tanks that constituted the waste neutralization system.

In April 1979, Trichloroethene ("TCE"), 1,2,3-trichloropropane, tetrachloroethene ("PCE") and other volatile organic compounds ("VOCs") were detected in the Upper Merion Reservoir ("UMR"). The UMR was formerly a dolomite quarry, known as the Bridgeport Quarry, and has served as a public water supply source operated by the Philadelphia Suburban Water Company since 1969. The reported presence of VOCs in the UMR prompted an area-wide investigation by PADER and the USEPA to identify potential sources of ground water contamination.

In July, 1979 PADER and USEPA personnel sampled Tank 2, the "cesspool", at the site. While onsite approximately 30 drums, stored in an asphalt paved area adjacent to the east side of the building, were observed by USEPA and PADER. More than 20 drums reportedly contained water that was contaminated with trace amounts of solvents; some of the drums reportedly contained spent solvent, and some were empty.

In correspondence dated September 7, 1979, Kessler was notified by the PADER that the company was in violation of the Pennsylvania Clean Streams Law because TCE and other organic compounds had been detected in the cesspool water sample collected by USEPA/PADER. At that time, Kessler was directed by PADER to install monitoring wells to define the extent of ground water contamination, develop a recovery plan, eliminate all sources of ground water pollution, and prepare a Pollution Incident Prevention Plan for the facility.

In 1981 the septic tank and cesspool were excavated and disposed offsite along with a quantity of contaminated soil and sludge. EPA collected soil and ground water samples during the excavation process. Analysis of the samples confirmed that the soil and ground water onsite contained high

levels of volatile organics. The hole left by the excavated septic tank, cesspool, and soil was filled with approximately 15 feet of gravel, then covered with topsoil.

The USEPA finalized the listing of the Site on the National Priorities List ("NPL") in September 1982.

In 1984, pursuant to an agreement between Kessler and the United States, a Court Order was issued to Kessler to conduct a ground water withdrawal, treatment and soil flushing program. Kessler had continued the ground water treatment program until 1990.

III. SCOPE AND ROLE OF RESPONSE ACTION

The Proposed Remedial Action described in this Proposed Plan will comprehensively address the threats posed by the release of hazardous substances at the Site. The principal threats posed by the Site are due to *VOC* contamination in the ground water. EPA has classified the affected aquifer at the Site as a Class IIA aquifer, a current source of drinking water, in accordance with the EPA Document "Guidelines for Groundwater Classification: (Final Draft, December 1986). The concentrations of contaminants in the ground water at the Site are above Maximum Contaminant Levels ("MCLs") which are enforceable, health-based drinking water standards established under the Safe Drinking Water Act ("SWDA"), 42 U.S.C. §§ 300f to 300j-26.

The primary objectives of EPA's action at the Site are: to prevent human exposure to contaminants in the ground water, to restore ground water to background levels of contaminants, to protect uncontaminated ground water for current and future use, and to protect environmental receptors.

IV. SUMMARY OF SITE RISKS

As part of the RI/FS, an analysis was conducted to estimate human health and environmental problems that could result if contamination at the Site is not remediated. This analysis is commonly referred to as the **Baseline Risk Assessment**. The Risk Assessment involves assessing the toxicity, or degree of hazard, posed by hazardous substances related to the Site, and involves describing the routes by which humans and the environment could come into contact with these substances. Separate calculations are made for those substances that can cause cancer (carcinogenic) and for those that can cause non-carcinogenic health effects.

The National Oil and Hazardous Substances Contingency Plan ("NCP") established acceptable levels of carcinogenic risk for Superfund Sites ranging from 1 excess cancer case per 10,000 people exposed to 1 excess cancer case per 1 million people exposed. This translates to a risk range of between 1×10^{-4} and 1×10^{-6}. In addition to carcinogenic risk, contaminants that are ingested, inhaled, or dermally absorbed may present a non-carcinogenic risk to different organs of the human body. This non-carcinogenic risk or toxic equivalent is expressed as a Hazard Index ("HI"). A HI exceeding one (1) is considered an unacceptable non-carcinogenic risk.

Sampling of the soil gas, soils, ground water, surface water, and sediment was conducted to determine the nature and extent of contamination present at the site. Sample locations were selected to target areas of known or suspected contamination based on historical practices of solvent handling, storage, use, and knowledge of facility operations.

Environmental media were analyzed for volatile organic compounds, semi-volatile organic compounds, pesticides/PCBs and metals. Additionally, select soil samples were analyzed for Total Organic Carbon ("TOC"), grain-size distribution, permeability, in situ soil moisture, and density; surface water samples were analyzed in situ for Ph, temperature, Eh, dissolved oxygen, and specific conductivity; and sediment samples were analyzed for grain size distribution and TOC. Various water quality

parameters were also measured in situ which included Ph, temperature, Eh, dissolved oxygen and specific conductivity.

TCE and 1,1,1-TCA were detected in all ground water samples at concentrations ranging from 8.4 ppb at MW-3 to 600 ppb at RW-1 for TCE, and 1.4 ppb at MW-3 to 340 ppb at RW-1 for 1,1,1-TCA. The highest TCE hit was at the 149'-160' interval at RW-1, and for 1,1,1-TCA at the 126'-138' interval at RW-1.

The results of the sampling confirmed that surface soils, subsurface soils, surface water and sediments are not a transport pathway for the migration of site-related contaminants. VOCs, primarily TCE and 1,1,1,-TCA, are present in the aquifer beneath the Site. Semivolatiles, pesticides/PCBs, and metals that were detected were similar to background concentrations. Figures 2 and 3 depict the approximate areal extent of the distribution of TCE and 1,1,1,-TCA in the ground water. The background or upgradient concentration of VOCs was not adequately determined during the RI. However, EPA believes that sufficient information regarding ground water movement and contamination was collected during the RI to move ahead with the Proposed Plan and ROD for the Site.

The results of the risk assessment for the Site are summarized below and in Tables 1 and 2.

The excess lifetime cancer risk for onsite workers currently exposed is 1.8×10^{-6}. The noncarcinogenic hazard index is 0.006. The exposure pathways assume dermal contact with soil, ingestion of soil and inhalation of volatiles in indoor air.

For the trespassing scenario the most sensitive receptor would be a child. The excess lifetime cancer risk for a child Site trespasser is 1.1×10^{-5}. The hazard index is 0.02. The exposure pathways assume soil and sediment ingestion, dermal contact with soil and sediment, and domestic use of ground water. Risk from the exposure to ground water was calculated assuming only Site ground water reaches the UMR and that the water was untreated prior to use.

The excess lifetime cancer risk for a future onsite construction worker is 2.6×10^{-7}. The hazard index is 0.02. The exposure pathways assume dermal contact with soil, ingestion of soil and inhalation of fugitive dust.

The excess lifetime cancer risks for an onsite adult resident is 2.2×10^{-4} and for an onsite child resident is 2.8×10^{-4}. The hazard indices are 0.15 for the adult and 1.25 for the child. The exposure pathways assume dermal contact with soil, ingestion of soil, inhalation of volatiles in indoor air, and domestic use of Site ground water.

Actual or threatened releases of hazardous substances from this Site, if not addressed by the preferred alternative or one of the other remedial measures considered, present a current or potential threat to public health, welfare and the environment.

V. SUMMARY OF REMEDIAL ACTION ALTERNATIVES

The Feasibility Study ("FS") Report discusses the alternatives evaluated for the Site and provides supporting information leading to alternative selection by EPA.

Five remedial alternatives were carried through a detailed analysis in the FS. These are numbered to correspond with the numbers in the FS.

ALTERNATIVES FOR GROUND WATER

1: No action
2: Institutional Controls/Natural Attenuation
3: Extraction/Air Stripping
4: Extraction/Carbon Absorption
5: Extraction/Offsite disposal

Common Components

A ground water extraction system will be common to each alternative that includes ground water extraction (Alternatives 3, 4, and 5). The cost estimates for the ground water extraction system for the Site are based on the use of well RW-1; however, the actual number and locations of extraction wells will be determined in the remedial design.

The objective of each ground water extraction alternative is to hydraulically contain the contaminated ground water plume where the ground water contamination exceeds the relevant background concentration and to restore the contaminated ground water to background levels. For purposes of comparing alternatives and relative cleanup times the background concentration of TCE in the aquifer had been estimated at 33 ppb. EPA and PADER believe the relevant background concentration is lower than 33 ppb. The relevant background concentration will be determined in the remedial design phase. Based on the modeling conducted in the RI, a flow rate of 10 gallons per minute ("gpm") was determined to be an effective pumping rate to reduce or remove the Site-related VOCs in the ground water, unattended on a continuous 24-hour-per-day performance basis. Pumping RW-1 at 10 gpm is estimated to lower the contaminant concentration to 39 ppb TCE in 7 years. Since the relevant background concentration of the contaminants is expected to be lower than 33 ppb, the time required to achieve the relevant background concentration is expected to be longer than 7 years, the time predicted by the model when assuming a background concentration of 33 ppb.

Ground water monitoring is a common component of Alternatives 2, 3, 4 and 5. For costing purposes it has been assumed that sampling and analysis for volatile organics will be conducted on the following wells: RW-1, MW-2, MW-6, MW-7 and MW-8. The actual wells selected for the monitoring well network will be determined in the remedial design phase. For costing purposes the O&M time period was based on 30 years for all alternatives

Major ARARs for the Site

The goal of the remedy for the Site is to restore the quality of ground water to comply with Federal and State ARARs. The Commonwealth of Pennsylvania standards specify that all ground water containing hazardous substances must be remediated to "background" quality pursuant to 25 PA code §§ 264.97 (i), (j), and 264.100(a)(9).

The ground water collected under Alternatives 3 and 4 shall be treated to comply with the substantive requirements of the Section 402 of the Clean Water Act, 33 U.S.C. §1342, and the National Pollutant Discharge Elimination System ("NPDES") discharge regulations set forth at 40 CFR §§ 122.41-122.50, the Pennsylvania NPDES regulations (25 PA Code §92.31), the Pennsylvania Wastewater Treatment Regulations (25 PA Code §§95.1 - 95.3), and the Pennsylvania Water Quality Standards (25 PA Code §§93.1 - 93.9).

Federal Clean Air Act requirements, 42 U.S.C. §§7401 et seq. are applicable to Alternatives 3, 4 and 5 and must be met for the discharge of contaminants to the air. Pennsylvania's Air Pollution Control Act

is also applicable, as are Pennsylvania's Air Pollution Control Regulations (25 Pa. Code Chapters 121-142) to Alternatives 3, 4, and 5.

The requirements of Subpart AA (Air Emission Standards for Process Vents) of the Federal RCRA regulations set forth at 40 CFR Part 264 are relevant and appropriate, and (depending upon the levels of organics in the extracted ground water and treatment residuals) may be applicable to the air stripping operations conducted as part of Alternative 3. These regulations require that total organic emissions from the air stripping process vents must be less than 1.4 kg/hr (3 lb/hr) and 2800 kg/yr (3.1 tons/yr).

25 Pa. Code Section 123.31 is applicable to Alternatives 3, 4, and 5 and prohibits malodors detectable beyond the Site property line.

The resource recovery and offsite disposal activities shall comply with CERCLA Section 121(d)(3) and with EPA OSWER Directive #9834.11, both of which prohibit the disposal of Superfund Site waste at a facility not in compliance with Sections 3004 and 3005 of RCRA and all applicable State requirements for Alternatives 3, 4, and 5.

25 Pa. Code Section 127.12(a)(5) are applicable to new point source air emissions that result from implementation of Alternative 3, 4 and 5. These Commonwealth of Pennsylvania regulations require that emissions be reduced to the minimum obtainable levels through the use of best available technology ("BAT") as defined in 25 Pa. Code § 121.1.

25 Pa. Code Section 127.11 are applicable to Alternatives 3, and 4. These Commonwealth of Pennsylvania regulations require a plan for approval for most air stripping and soil venting/decontamination projects designed to remove volatile contaminants from soil, water, and other materials regardless of emission rate.

Regulations concerning well drilling as set forth in 25 Pa. Code Chapter 107 are applicable to the drilling of any new wells at the Site. These regulations are established pursuant to the Water Well Drillers License Act, 32 P.S.§ 645.1 et seq.

The substantive requirements of the Delaware River Basin Commission (18 CFR Part 430) are applicable to Alternatives 3, 4 and 5. These regulations establish requirements for the extraction of ground water within the Delaware River Basin.

Alternative 1: NO ACTION

Estimated Capital Costs: $0
Estimated Total O&M Costs: $100,000
Estimated 30 Year Total Present Worth Costs: $92,600

The National Contingency Plan ("NCP") requires that EPA consider a "No Action" alternative for each site to establish a baseline for comparison to alternatives that do require action. There are no capital costs associated with this alternative. The costs associated with this alternative include dismantlement of the existing air stripper, well abandonment, disposal of system components, and reporting. The total O&M costs include the closure costs. Under this alternative, no additional remedial activities or ground water monitoring would be conducted.

Alternative 2: INSTITUTIONAL CONTROLS/ NATURAL ATTENUATION

Estimated Capital Costs: $0
Estimated Total O&M Costs: $364,800.00
Estimated 30 Year Total Present Worth Costs: $364,800.00

Under this alternative, institutional controls would be in the form of deed restrictions regarding ground water use at the Site to prevent human exposure to the ground water contaminants. This alternative does not include an active treatment component. Continued monitoring would be conducted to track natural attenuation and will be used to determine a Site-specific degradation rate. The expected time for natural degradation processes to return VOC concentrations to the assumed background concentration of 33 ppb is 18 years. Since the relevant background concentration is expected to be lower than 33 ppb the time required to achieve the relevant background concentration is expected to be longer. The total O&M costs include the following closure costs: system dismantlement, system component disposal, well abandonment, and closure reporting.

Alternative 3: EXTRACTION/AIR STRIPPING

Estimated Capital Costs: $125,000.00
Estimated Total O&M Costs: $556,500.00
Estimated 30 Year Total Present Worth Costs: $681,500.00

This alternative involves ground water extraction and treatment of the contaminated ground water by air stripping. The air and VOCs exiting the air stripping column would be treated by a carbon adsorption unit. The treated ground water discharge would comply with NPDES effluent limitations for discharge to the onsite intermittent creek. Ground water monitoring would be required. The total O&M costs include the following closure costs: system dismantlement, system component disposal, well abandonment, and closure reporting.

Alternative 4: EXTRACTION/GRANULAR ACTIVATED CARBON

Estimated Capital Costs: $75,000.00
Estimated Total O&M Costs: $547,300.00
Estimated 30 Year Total Present Worth Costs: $622,300.00

This alternative involves ground water extraction and a system to treat contaminated ground water with granular activated carbon ("GAC"). The effluent from the final GAC unit will be discharged to the intermittent stream onsite. Spent carbon will be shipped offsite for regeneration. Ground water monitoring would be required. The total O&M costs include the following closure costs: system dismantlement, system component disposal, well abandonment, and closure reporting.

Alternative 5: EXTRACTION/OFFSITE DISPOSAL

Estimated Capital Costs: $40,000.00
Estimated Total O&M Costs: $689,700.00
Estimated 30 Year Total Present Worth Costs: $729,700.00

The ground water extraction and monitoring components are similar to Alternatives 3 and 4. This

alternative does not include onsite treatment of contaminated ground water, but rather includes discharge of the ground water to the local Publicly Owned Treatment Works ("POTW") for treatment. Ground water monitoring would be required. The total O&M costs include the following closure costs: system dismantlement, system component disposal, well abandonment, and closure reporting.

The discharge of effluent to the POTW shall comply with the federal Clean Water Act (33 U.S.C. §§1251 et seq.) pretreatment regulations for existing and new sources of pollution as set forth at 40 CFR Part 403.

EVALUATION OF REMEDIAL ALTERNATIVES

EPA's preferred alternative for addressing contaminated ground water at the Stanley Kessler Site is Alternative 4: Ground water extraction and treatment by granular activated carbon.

Based on new information or public comments, EPA in consultation with the Commonwealth of Pennsylvania, may modify the preferred alternative or select another remedial action presented in this Proposed Plan or the RI/FS. The public, therefore, is encouraged to comment on all of the alternatives presented in this Proposed Plan. The RI/FS should be consulted for more information on these alternatives.

Based on current information, this alternative provides the best balance of trade-offs among the alternatives with respect to the nine criteria EPA uses to evaluate each alternative. However, the extraction/treatment alternatives (Alternative 3 and Alternative 4) rated relatively evenly against all of the nine criteria. This section describes the performance of the preferred alternative against the nine criteria, and compares it to the alternatives under consideration.

Summary of Nine Criteria

In selecting the preferred alternatives, EPA evaluated each proposed remedy against the nine criteria specified in the National Contingency Plan. The alternative must first satisfy the threshold criteria. Next, the primary balancing criteria are used to weigh the trade-offs or advantages and disadvantages of the alternatives. Finally, after public comment has been obtained the modifying criteria are considered. Below is a summary of the nine criteria used to evaluate the remedial alternatives.

Threshold Criteria

- Overall protection of human health and the environment: Whether the remedy provides adequate protection and how risks posed through each pathway are eliminated, reduced or controlled through treatment, engineering controls, or institutional controls.

- Compliance with ARARs: Whether or not a remedy will meet all applicable or relevant and appropriate requirements (ARARs) of Federal and State environmental statutes and/or whether there are grounds for invoking a waiver. Whether or not the remedy complies with advisories, criteria and/or guidance that may be relevant.

Primary Balancing Criteria

- Long-term effectiveness and permanence: The ability of the remedy to afford long-term, effective and permanent protection to human health and the environment, along with the degree of certainty that the alternative will prove successful.

- Reduction of toxicity, mobility or volume: The extent to which the alternative will reduce the toxicity, mobility, or volume of the contaminants causing the site risks.

- Short-term effectiveness: The time until protection is achieved and the short-term risk or impact to the community, onsite workers and the environment that may be posed during the construction and implementation of the alternative.

- Implementability: The technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement that remedy.

- Cost: Includes estimated capital, operation and maintenance, and net present worth costs. *The present worth analysis is used to evaluate expenditures that occur over different time* periods by discounting all future costs to a common base year, usually the current year. This analysis allows the cost of remedial action alternatives to be compared on the basis of a single figure representing the amount of money that, if invested in the basis year and disbursed as needed, would be sufficient to cover all costs associated with the remedial action over its planned life.

Modifying Criteria

- State Acceptance: Whether the Commonwealth concurs with, opposes, or has no comment on the Preferred Remedial Alternative.

- Community Acceptance: Whether the public agrees with the Preferred Remedial Alternative (this will be assessed in the ***ROD*** following a review of the public comments received on the Administrative Record and the Proposed Plan).

COMPARATIVE ANALYSIS OF ALTERNATIVES

Overall Protection.

Alternative 1 (No Action) will not protect human health or the environment. Alternative 2 (Natural Attenuation/Institutional Controls) will prevent human exposure to Site ground water contaminants but will not actively reduce the contaminants in the ground water or prevent migration of contaminated ground water. *Alternatives 3, 4, and 5 would each prevent migration of contaminants in the ground* water system, will actively remove contaminants from the ground water system, and will prevent human exposure to Site ground water contaminants.

Compliance with ARARs

The concentrations for VOCs currently in ground water exceed Maximum Contaminant Levels in the Safe Drinking Water Act and also exceed the Commonwealth of Pennsylvania's criteria for remediation to background concentrations. Once ground water treatment is implemented, remediation to ground water levels that meet Federal and State ARARs will be required. Alternatives 2, 3, 4, and 5 will comply with applicable or both relevant and appropriate federal and State environmental regulations. Alternative 2 would not attain PADER ARARs requiring ground water remediation until background concentrations are attained through natural attenuation, dispersion and degradation processes. Alternative 1 will not comply with 25 PA code §§264.97, general ground water monitoring requirements.

The goal of the ground water remedy for the Site is to restore the quality of ground water to comply with Federal and State ARARs. The Commonwealth of Pennsylvania has identified standards that

specify that all ground water containing hazardous substances must be remediated to "background" quality pursuant to 25 PA code §§ 264.97 (i), (j), and 264.100(a)(9).

The ground water collected under Alternatives 3 and 4 will be treated to comply with the substantive requirements of the Section 402 of the Clean Water Act, 33 U.S.C. §1342, and the National Pollutant Discharge Elimination System ("NPDES") discharge regulations set forth at 40 C.F.R. Parts 122-124, the Pennsylvania NPDES regulations (25 PA Code §92.31, and the Pennsylvania Water Quality Standards (25 PA Code §§93.1-93.9)).

Any surface water discharge will comply with the substantive requirements of the Clean Water Act NPDES discharge regulations (40 CFR §§122.41 - 122.50), the Pennsylvania NPDES regulations (25 PA Code §92.31), the Pennsylvania Wastewater Treatment Regulations (25 PA Code §§95.1 - 95.3), and the Pennsylvania Water Quality Standards (25 PA Code §§93.1 - 93.9).

Federal Clean Air Act requirements, 42 U.S.C. §§7401 et seq., are applicable and must be met for the discharge of contaminants to the air. Pennsylvania's Air Pollution Control Act is also applicable, as are Pennsylvania's Air Pollution Control Regulations (25 Pa. Code Chapters 121-142).

The requirements of Subpart AA (Air Emission Standards for Process Vents) of the Federal RCRA regulations set forth at 40 CFR Part 264 are relevant and appropriate, and (depending upon the levels of organics in the extracted ground water and treatment residuals) may be applicable to the air stripping operations conducted as part of Alternative 3. These regulations require that total organic emissions from the air stripping process vents must be less than 1.4 kg/hr (3 lb/hr) and 2800 kg/yr (3.1 tons/yr).

25 Pa. Code Section 123.31 is applicable to Alternatives 3 through 5 and prohibits malodors detectable beyond the Site property line.

The resource recovery and offsite disposal activities would comply with CERCLA Section 121(d)(3) and with EPA OSWER Directive #9834.11, both of which prohibit the disposal of Superfund Site waste at a facility not in compliance with Sections 3004 and 3005 of RCRA and all applicable State requirements.

25 Pa. Code Section 127.12(a)(5) will apply to new point source air emissions that result from implementation of Alternative 3,4 and 5. These Commonwealth of Pennsylvania regulations require that emissions be reduced to the minimum obtainable levels through the use of best available technology ("BAT") as defined in 25 Pa. Code § 121.1.

25 Pa. Code Section 127.11 will apply to Alternatives 3 and 4. These Commonwealth of Pennsylvania regulations require a plan for approval for most air stripping and soil venting/decontamination projects designed to remove volatile contaminants from soil, water, and other materials regardless of emission rate.

Regulations concerning well drilling, as set forth in 25 Pa. Code Chapter 107, are applicable. These regulations are established pursuant to the Water Well Drillers License Act, 32 P.S.§ 645.1 et seq.

Long-term Effectiveness and Permanence

Alternatives 1 and 2 will not actively reduce contaminant concentrations in the ground water at the Site. However, natural attenuation, dispersion, and degradation should result in a decrease in contaminant concentrations over time. Under Alternative 1 potential risks associated with ingestion of the onsite ground water will continue until the natural degradation process is complete. Alternative 2 will prevent human exposure to ground water contaminants through deed restrictions prohibiting

ground water use. The effectiveness of Alternatives 3, 4 and 5 will depend on the actual flow and chemical characteristics of the final recovered ground water and the discharge requirements for the selected system.

The ground water recovery system would effectively control the migration of ground water contaminants. Its effectiveness in completely removing contaminants to the relevant background concentration (to be determined in the design phase) will be highly dependent on the characteristics of the aquifer, the background contaminant distribution and the rate of contaminant desorption from the aquifer matrix.

Reduction of Toxicity, Mobility and Volume

Alternatives 3, 4 and 5 all include recovery and treatment of the contaminated ground water and will therefore, significantly reduce the toxicity and volume of the contaminants of concern by removing them. The volatile organics recovered in Alternative 3 will be removed from the ground water in the air stripping tower, and will be treated by the off-gas control system. The volatile organics recovered in Alternative 4 will be removed from the ground water by the GAC. The contaminants of concern recovered in Alternative 5 will be treated offsite at the local POTW.

Alternatives 1 and 2 would not actively reduce or destroy contaminants or limit the mobility of the contaminants in the ground water.

Short-term Impacts

Alternatives 3, 4 and 5 all have similar short-term impacts related to dermal hazards associated with workers contacting the contaminated ground water, physical hazards associated with installing the recovery system and effluent distribution piping, and potential hazards to onsite personnel. Potential dermal contact hazards can be minimized using appropriate personal protective equipment when contact with contaminated ground water is possible. Short-term impacts resulting from stripper emissions (Alternative 3) will be controlled by using the appropriate off-gas treatment.

Implementability

The time needed to install Alternatives 3 through 5 would depend on the final system configuration based on recovered ground water flow and chemical characteristics and the location of the final recovery system. All three should be designed and installed within the same general timeframe. Alternatives 3 and 4 can be readily implemented at the Site. Sufficient information is currently available for preliminary sizing of the treatment systems' components; however, these components are subject to modification during the final design of the alternative. Ground water extraction using recovery wells and treatment by air stripping (Alternative 3) and GAC (Alternative 4) are proven technologies for treating contaminated ground water. The implementability of Alternative 5 (Offsite Disposal at the POTW) is contingent on the POTW accepting the extracted ground water. Based on the uncertainties surrounding potential future POTW requirements regarding volume and pretreatment, Alternative 5 is not as easily implemented as Alternatives 3 and 4, and depending on the capacity at the POTW, may not be implementable.

Costs. A comparison of capital, O&M, and Present Worth costs for each alternative is presented in Table 3.

State Acceptance. PADER has assisted EPA in the review of reports and Site evaluations. This criterion will be addressed in the Record of Decision prepared for the Site. Based on PADER comments to date, the Commonwealth is expected to concur with the preferred alternative.

Community Acceptance. Community acceptance of the Preferred Alternative will be evaluated after the public comment period ends and will be described in the Record of Decision.

In summary, the preferred alternative is believed to provide the best balance of trade-offs among the alternatives evaluated with respect to the nine criteria above. Based on the information available at this time, EPA believes the preferred alternative would protect human health and the environment, would comply with ARARs and be cost-effective. In addition, permanent disposal options would be utilized to the maximum extent practicable.

COMMUNITY ROLE IN SELECTION PROCESS

This Proposed Plan is being distributed to solicit public comment regarding the proposed remedial alternatives for cleaning up the Site. EPA relies on public input so that the remedy selected for each Superfund site meets the needs and concerns of the local community. To assure that the community's concerns are being addressed, a public comment period lasting thirty (30) days will follow this public notice and a public meeting will be held in the community. It is important to note that although EPA has proposed a Preferred Alternative, no remedy selection for the Site has been made. All comments received will be considered and addressed by EPA.

Detailed information on the material discussed herein may be found in the ***Administrative Record*** for the Site, which contains the RI and FS Reports and other information used by EPA in the decision-making process. EPA encourages the public to review the Administrative Record in order to gain a more comprehensive understanding of the Site and Superfund activities that have been conducted there. The locations of the Administrative Record file for the Site are:

Upper Merion Township Library
175 West Valley Forge Road
King of Prussia, PA 19406
(215) 265-4805

A copy of the Administrative Record file is also available at EPA Region III Offices; for an appointment contact:

Anna Butch
Administrative Record Coordinator
U.S. Environmental Protection Agency, Region III
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-3037

Public Comment Period

The public comment period will run from June 20, 1994 to July 19, 1994. Written comments, questions and requests for information can be sent to:

Ruth O'Connor, Remedial Project Manager
US EPA Region III, (3HW21)
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-3216

or

Terri White, Community Relations Coordinator
US EPA Region III, (3EA21)
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-6925

The comment period includes a public meeting at 7:00 P.M., on June 30, 1994, at which EPA will present the proposed alternative action, answer questions, and accept oral and written comments. The meeting will be held at the following location:

Upper Merion Township Building, Freedom Hall
175 West Valley Forge Road
King of Prussia, PA 19406

Following the conclusion of the thirty (30) day public comment period on this proposed plan, a Responsiveness Summary will be prepared. The Responsiveness Summary will summarize significant comments on EPA's Preferred Remedial Alternative and EPA's responses to these comments. EPA will then prepare a formal decision document, the ROD, that summarizes the decision process and the remedy selected for the Site. This ROD will include the Responsiveness Summary. Copies of the ROD will be made available for public review in the information repository. Once the formal decision document is approved, EPA will invite the parties responsible for contamination at the Site to participate in the implementation of remedial design and remedial action for the Site.

GLOSSARY

Aquifer - An underground geologic formation, or group of formations, containing useable amounts of ground water that can supply wells and springs.

Administrative Record - EPA's official compilation of documents, data, reports, and other information that is considered important to the status of, and decisions made, relative to a Superfund site. The record is placed in the information repository to allow public access to the material.

Carcinogen - A cancer-causing agent.

CFR - The Code of Federal Regulations. For example, the citation 40 CFR 260 means Title 40 of the Code of Federal Regulations, Part 260.

Granular Activated Carbon ("GAC") - Carbon in a powdered form which filters organic contaminants by absorbing the compounds from the air or water that passes through the carbon.

Ground water - Water found beneath the earth's surface that fills bedrock fractures and pores between soil, sand, and gravel particles to the point of saturation. Ground water often flows more slowly than surface water. When it occurs in sufficient quantity, ground water can be used as a water supply.

Information Repository - A location where documents and data related to the Superfund project are placed by EPA to allow the public access to the material.

National Oil and Hazardous Substances Pollution Contingency Plan ("NCP") - The Federal regulation that guides the determination and manner in which sites will be cleaned up under the Superfund program.

National Priorities List ("NPL") - EPA's list of the nation's top priority hazardous waste sites that are eligible to receive federal money for response action under Superfund.

Order of magnitude - a range of value extending from some value to ten times that value.

Plume - The three dimensional area of contamination in a particular media, such as ground water. A plume can expand due to ground water movement.

ppb - Parts per Billion. Five parts per billion is a fractional representation of 5 parts in 1 billion parts. For solids, ppb is a fraction based on weight, for example 5 pounds of a contaminant in a billion pounds (500,000 tons) of soil. For liquids ppb is based on volume, for example 5 tablespoons of a contaminant in a billion tablespoons (3,906,250 gallons) of water.

ppm - Parts per million. Five ppm is a fractional representation of 5 parts in 1 million.

RCRA (Resource Conservation and Recovery Act) - A statute under which EPA and authorized States regulate the management of hazardous waste.

Record of Decision ("ROD") - A legal document that describes the remedial actions selected for a Superfund site, why certain remedial actions were chosen as opposed to others, how much they will cost, and how the public responded.

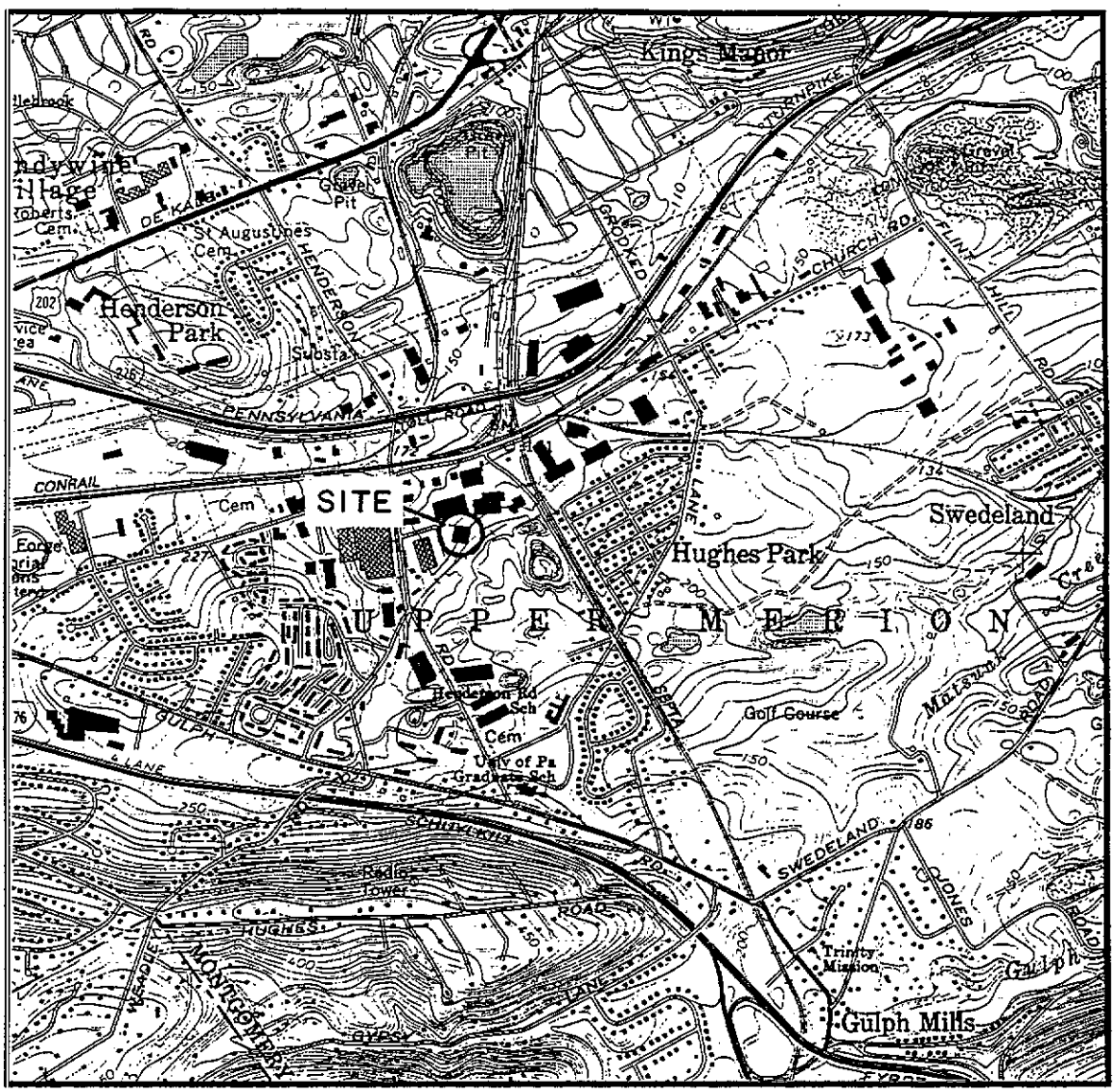
Remedial Investigation and Feasibility Study ("RI/FS") - A report composed of two scientific studies, the RI and the FS. The RI is the study to determine the nature and extent of contaminants present at a Site and the problems caused by their release. The FS is conducted to develop and evaluate options for the cleanup of a Site.

Risk Assessment ("RA") - The RA is an essential component of the Remedial Investigation Report. This portion of the RI evaluates the carcinogenic and non-carcinogenic risks presented by the contaminants at the site. Risk is calculated both for current uses and potential future uses of the property by a defined population i.e. on and offsite residents, trespassers, etc.

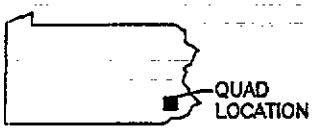
Scientific Notation - In dealing with particularly large or small numbers, scientists and engineers have developed a "short hand" means of expressing numerical values. For example, 1,000,000 can be written as 1×10^{6} and 1/1,000,000 can be written as 1×10^{-6}.

SUPERFUND (Comprehensive Environmental Response Compensation and Liability Act - A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. The Act created a Trust Fund, known as Superfund, which is available to EPA to investigate and clean up abandoned or uncontrolled hazardous waste sites.

Volatile Organic Compounds ("VOCs") - Chemical compounds containing carbon that readily volatilize or evaporate when exposed to the air. These compounds can be used as solvents by industry. Chlorinated ethenes are a class of VOCs that contain chlorine such as Trichloroethene (TCE), and 1,1,1-Trichloroethane (TCA).



SOURCE: U.S.G.S. TOPOGRAPHIC QUADRANGLE, NORRISTOWN, PA
7.5 MINUTE SERIES, 1966/PHOTOREVISED 1983



N

SCALE 1:24,000

0 2,000 4,000

SCALE FEET

GROUNDWATER TECHNOLOGY
223 WILMINGTON WEST CHESTER PIKE
CHADDS FORD, PA 19317
(215) 558-1730

SITE LOCATION MAP

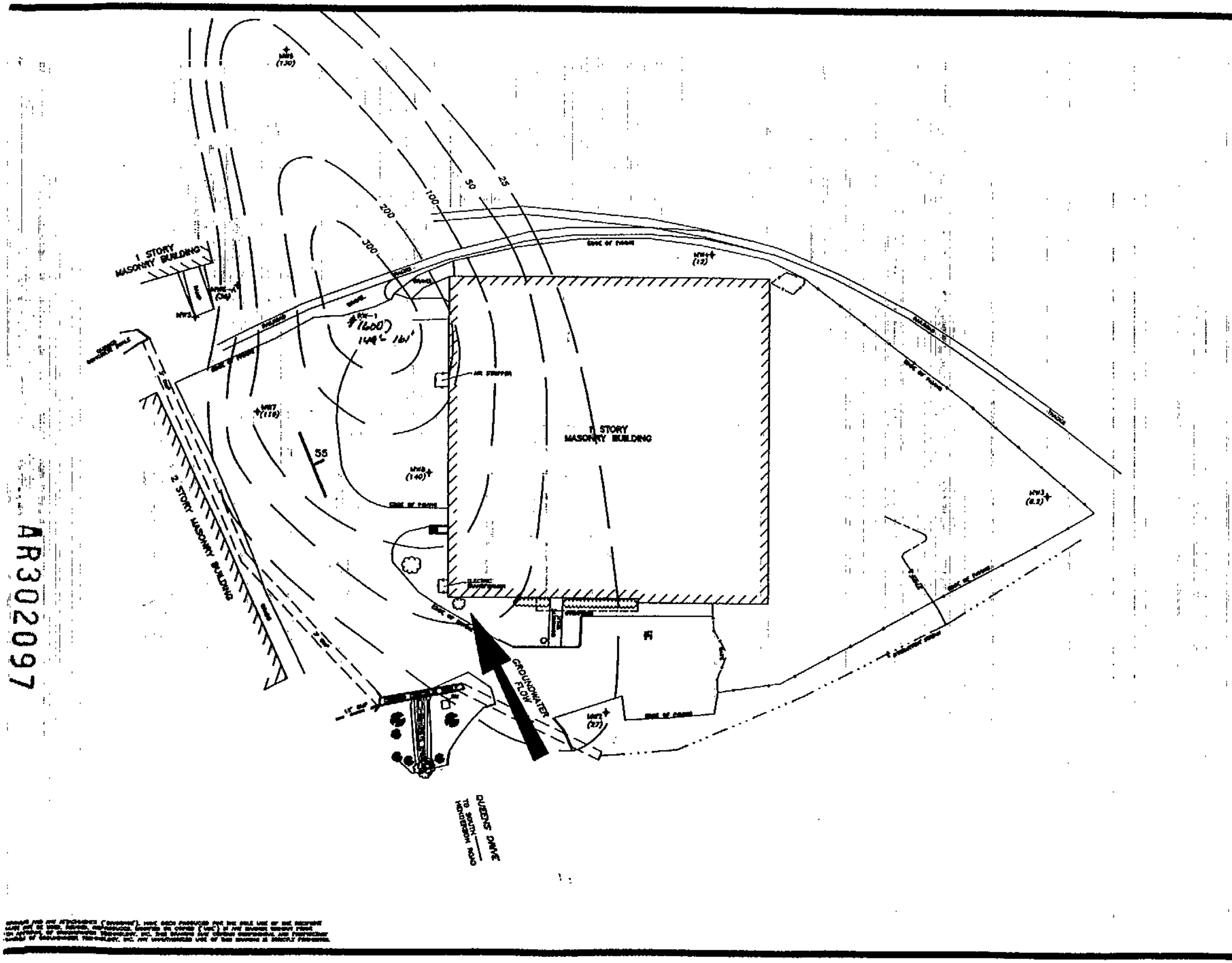
CLIENT: STANLEY KESSLER NPL SITE

DATE: 9/92

LOCATION: QUEENS DRIVE
UPPER MERION, PENNSYLVANIA

FIGURE: 1

AR302096



LEGEND

MW — MONITORING WELL
RW — RECOVERY WELL
FIRE STANDPIPE SURROUNDED BY BOLLARDS
FENCE LINE (CHAIN LINK, 6' HIGH)
INTERMITTENT STREAM
CENTER LINE
BM — BENCH MARK
CMP — CORRUGATED METAL PIPE
(12) — CONCENTRATION IN ug/l
CONCENTRATION CONTOUR
55 — BEDROCK STRIKE AND DIP (IN DEGREES)

SIGNATURE	DATE
REVIEW HYDRO/GEO:	
PROJECT HYDRO/GEO:	
PROJECT MGR:	
CLIENT:	

GROUNDWATER TECHNOLOGY
213 WILMINGTON WEST CHESTER PIKE
CHADDS FORD, PA 19317 (215) 388-1730

INFERRED TCE ISOCONCENTRATION CONTOURS

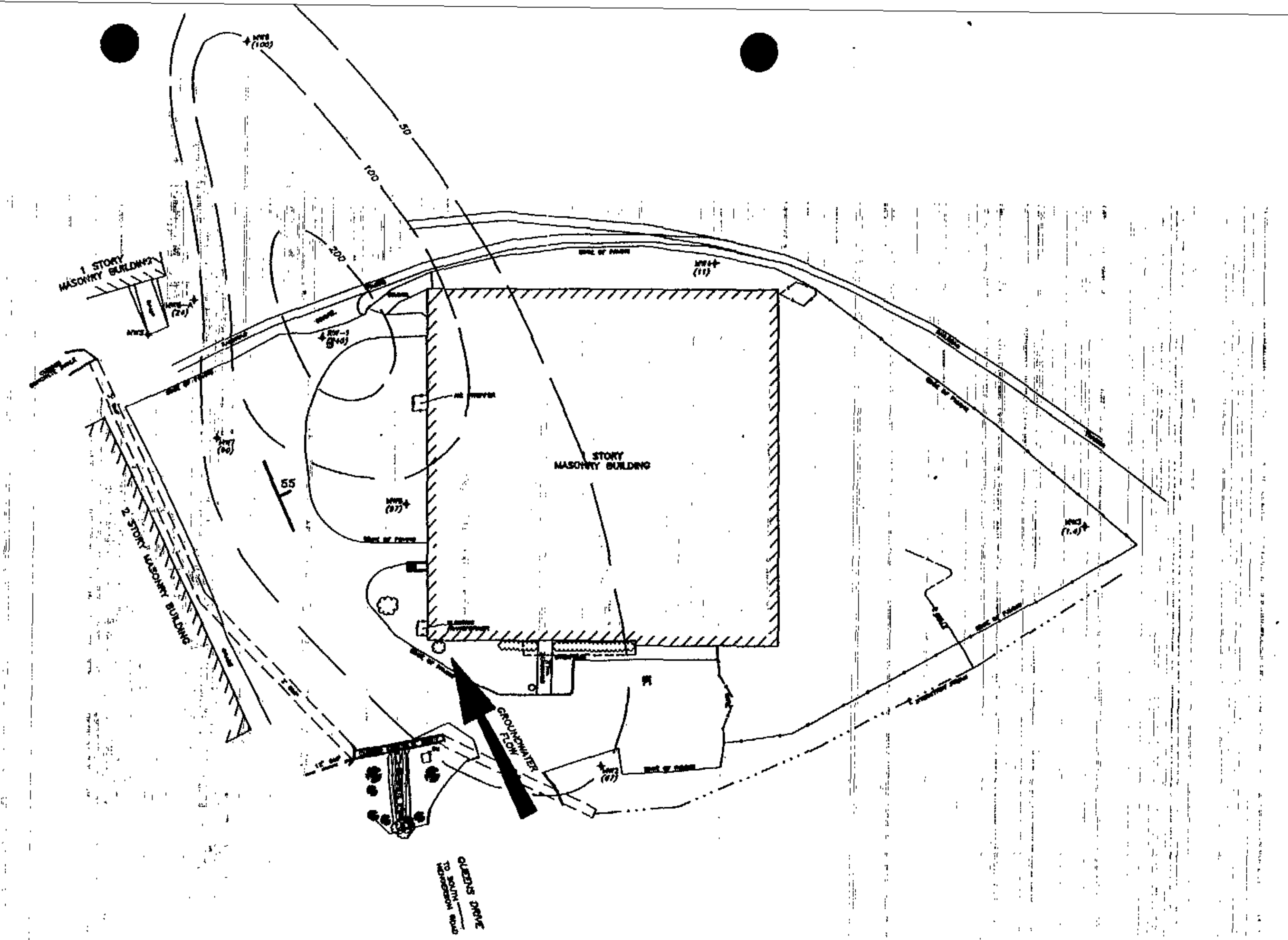
CLIENT: STANLEY KESSLER NPL SITE

LOCATION: QUEENS DRIVE UPPER MERION, PENNSYLVANIA

DESIGNED BY: SB	DETAILED BY: KRE	CHECKED BY: MJW
DRAWING DATE: 8/27/92	ACAD FILE: 5026TCE	
PROJECT NO.: 01303-5026	NOTES:	

FIGURE 2

AR302097



AR302098

LEGEND

MW — MONITORING WELL
RW — RECOVERY WELL
FIRE HYDRANT
FENCE (CHAIN LINK 6' HIGH)
INTERMITTENT STREAM
℄ — CENTER LINE
BM — BENCH MARK
CMP — CORRUGATED METAL PIPE
(11) — CONCENTRATION IN ug/l
CONCENTRATION CONTOUR
55 — BEDROCK STRIKE AND DIP (IN DEGREES)

BUILDING NORTH
15.5°
TRUE NORTH

SCALE 30 0 30 60 FEET

SIGNATURE	DATE
REVIEW HYDRO/GEO:	
PROJECT HYDRO/GEO:	
PROJECT MGR:	
CLIENT:	

GROUNDWATER TECHNOLOGY

223 WILMINGTON WEST CHESTER PIKE CHADDS FORD, PA 19317 (215) 388-1730

INFERRED 1,1,1-TCA ISOCONCENTRATION CONTOURS

CLIENT: STANLEY KESSLER NPL SITE

LOCATION: QUEENS DRIVE UPPER MERION, PENNSYLVANIA

DESIGNED BY:	DETAILED BY:	CHECKED BY:
SB	KRE	MJW

DRAWING DATE:	ACAD FILE:
8/27/92	5026TCA
PROJECT NO.: 01303-5026	NOTES:

FIGURE 3

Table 1
Risk Characterization Summary - Current Use

Potential Receptor	Exposure Pathway	Upper-Bound Estimated Cancer Risk	Estimated Hazard Index
Onsite Workers	• dermal contact with surface soil	6.2×10^{-7}	0.005
	• incidental ingestion of surface soil	2.3×10^{-7}	0.001
	• inhalation of volatiles in indoor air	9.5×10^{-7}	0.00005
TOTAL		**1.8×10^{-6}**	**0.006**
Trespassing Area Resident (Child)	• dermal contact with surface soil	1.9×10^{-7}	0.003
	• incidental ingestion of surface soil	1.1×10^{-7}	0.001
	• ingestion of drinking water	1.1×10^{-6}*	0.004
	• dermal contact while showering or bathing	1.0×10^{-8}	0.00001
	• inhalation of volatiles while showering or bathing	1.3×10^{-7}	0.00006
	• dermal contact with surface water	9.8×10^{-8}	0.0001
	• incidental ingestion of surface water	3.3×10^{-8}	0.00004
	• dermal contact with sediment	7.4×10^{-6}	0.01
	• incidental ingestion of sediment	1.6×10^{-6}	0.002
TOTAL		**1.1×10^{-5}**	**0.02**

NOTES:
* = Risk was calculated based on a transport model assuming only site groundwater reaches the UMR and that the water was untreated prior to use. Currently, groundwater withdrawn from the UMR is treated to meet MCLs before use.

Table 2
Risk Characterization Summary
Assumed Future Residential Development and Groundwater Use

Potential Receptor	Exposure Pathway	Upper-Bound Estimated Cancer Risk	Estimated Hazard Index
Onsite Construction Worker	• dermal contact with subsurface soil	8.7×10^{-8}	0.005
	• incidental ingestion of subsurface soil	1.7×10^{-7}	0.010
	• inhalation of fugitive dust	8.4×10^{-10}	0.002
TOTAL		**2.6×10^{-7}**	**0.02**
Onsite Resident (Adult)	• dermal contact with surface soil	2.3×10^{-7}	0.001
	• incidental ingestion of surface soil	1.7×10^{-7}	0.001
	• ingestion of drinking water	2.0×10^{-4}	0.15
	• dermal contact while showering or bathing	3.0×10^{-6}	0.002
	• inhalation of volatiles while showering or bathing	1.5×10^{-5}	0.002
	• inhalation of volatiles in indoor air	5.8×10^{-6}	0.0003
TOTAL		**2.2×10^{-4}**	**0.15**
Onsite Resident (Child)	• dermal contact with surface soil	1.0×10^{-6}	0.03
	• incidental ingestion of surface soil	1.4×10^{-6}	0.030
	• ingestion of drinking water	2.5×10^{-4}	1.22
	• dermal contact while showering or bathing	2.5×10^{-6}	0.003
	• inhalation of volatiles while showering or bathing	1.8×10^{-5}	0.005
	• inhalation of volatiles in indoor air	4.8×10^{-6}	0.0004
TOTAL		**2.8×10^{-4}**	**1.25**

TABLE 3
COST SUMMARY OF ALTERNATIVES
KESSLER NPL SITE

COMPONENT	TOTAL CAPITAL COSTS	O & M COSTS					PRESENT WORTH O & M COSTS ***	TOTAL COSTS ****
		YEARS 1-3	YEARS 4-15	YEARS 4-6	YEARS 7-12	CLOSURE COSTS		
Alternative 1: No Further Action	$0.00	$0.00	$0.00	NA	NA	* $100,000.00	$92,600.00	$92,600.00
Alternative 2: Institutional Controls	$0.00	$121,200.00	$417,600.00	NA	NA	**$180,000.00	$364,800.00	$364,800.00
Alternative 3: Air Stripping with Discharge to Surface Water (with vapor phase carbon)	$125,000.00	$250,800.00	NA	$228,000.00	$211,800.00	**$225,000.00	$556,500.00	$681,500.00
Alternative 4: Granular Activated Carbon with Discharge to Surface Water	$75,000.00	$247,200.00	NA	$224,400.00	$211,800.00	**$215,000.00	$547,300.00	$622,300.00
Alternative 5: Off-site Disposal to POTW	$40,000.00	$340,800.00	NA	$318,000.00	$211,800.00	**$210,000.00	$689,700.00	$729,700.00

NOTES:

Present worth analysis assumes ROD to be issued in 1994 and an 8% interest rate.

* **Closure costs to be incurred one year from issuance of ROD**

** **Closure cost to be incurred at project completion**

*** **Includes closure costs**

**** **Total Cost in 1994 dollars.**